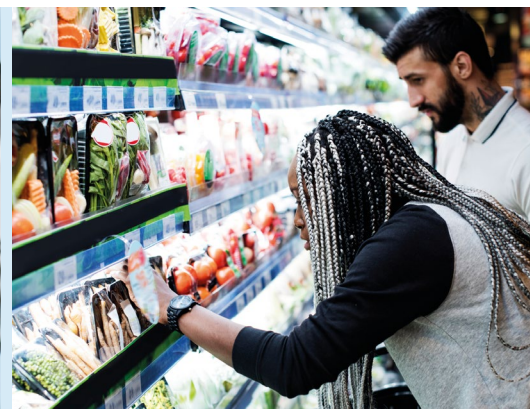


FSA Science Council Triennial Report

(April 2017–March 2020)

Plus Annual Report

(1 April 2019–31 March 2020)





“At this challenging time, ensuring the safety and integrity of food has never been more important. The Science Council is committed to supporting FSA in delivering the highest standards of food across the UK.”

Contents

Executive Summary	2
Overview of the Council	5
Member biographies	6
Summary of Science Council Programme over the last 3 years	8
Working Group 1: Science Capability and Assurance	9
Working Group 2: Risk and Uncertainty	11
Working Group 3: Food Systems and horizon scanning	13
Working Group 4: Data usage and digital technology	15
Working Group 5: Food hypersensitivity	16
Future of the Council	18
Annex: Annual Report, Summary of Science Council Activity (FY2019/2020)	21
Appendix: Science Council self-assessment against good practice guidelines for the independent scientific advisory committees	24

Executive Summary



Prof Sandy Thomas, OBE

Chair of the Science Council

“Welcome to this triennial report of the Science Council. Created in April 2017, the third anniversary gives us the opportunity to reflect on our achievements.

In those three years the Council has provided strategic advice to the FSA on three key areas, which are explored later in the report: science use and assurance; assessing risk and uncertainty; and food system risks and horizon scanning.

We have been very fortunate to have a very committed and expert membership. I would like to thank Prof. Laura Green, Prof. Mark Woolhouse and Prof. John O'Brien for their exemplary leadership on delivering the first three Working Group reports to the FSA. I would also like to thank Prof Green, Prof Woolhouse and Mr Mark Rolfe for their valuable service, as they have now completed their three-year term and retired from the Science Council.

The Council has since embarked on new areas of work focusing on how the FSA can use data usage and digital technology in a rapidly changing area, and an overview of the research landscape on food hypersensitivity.

In our short lifespan we have built productive relationships with the FSA Executive as well as other FSA Scientific Advisory Committees. We plan to strengthen our relationships with other government expert committees to broaden our understanding and expertise.

Looking ahead, COVID-19 has brought many challenges around the world, exposing vulnerabilities in the global food system. In the year ahead, the Science Council will play its part in supporting the FSA to ensure safe food. We are pleased to be expanding our membership and our capability to provide timely and valuable strategic advice on the use of science by the FSA.”



Prof Robin May

FSA Chief Scientific Adviser

“The Science Council was created under the oversight of my predecessor Professor Guy Poppy. I am extremely grateful that he established a strong, productive and creative relationship with this important independent advisory group which, over the last three years, has repeatedly demonstrated how invaluable it is in providing expert advice and oversight to the FSA.

The first Science Council review made 42 recommendations about how the FSA resources, identifies, creates, uses and communicates science. In response, the FSA has expanded internal scientific expertise and experience, built stronger relationships with potential research funding partners, put science and evidence centre-stage (both internally and externally) and set up ‘agile’ systems to support rapid evidence gathering (such as the Strategic Evidence Fund) and tap into expert advice (the Register of Specialists).

Subsequently, Science Council considered how the FSA establishes and communicates risk and uncertainty. Their report set out 15 key principles of best practice to follow when carrying out and communicating risk analysis. These recommendations have since formed the guiding principles for development of the FSA Risk Analysis process, providing us with a robust methodology for this critical activity.

More recently, the Council has been providing invaluable suggestions about how the FSA might be able to improve ‘horizon scanning’ to better understand global food systems risks and opportunities. It made five recommendations for improved long-term horizon scanning, in response to which we have now established a dedicated team in this area. This has already proved its value in providing a coordinated approach to horizon scanning. In fact, the lessons from this review have already been utilised in guiding our thinking about future changes to the food system as a result of the COVID-19 pandemic.

Needless to say, the Science Council is far from ‘resting on its laurels’ and is currently engaged in a series of exciting projects that are described below. In my first few months as Chief Scientific Adviser, I have been repeatedly struck by how much I value the ability to tap into the remarkable collective expertise of Science Council and very much look forward to continuing these strong and productive interactions over the coming years.”



Heather Hancock

Former Chair of the FSA

Our department has always benefited from hundreds of expert independent scientists, from academia, research bodies and industry, who have given their insight and knowledge to our specialist Scientific Advisory Committees. Our hope was to add to this a more strategic and foresighted element, creating a Council of eminent scientists across a range of disciplines, who could look more broadly at science in the FSA. As a government department with science and evidence at its heart, getting assurance about how we approach scientific questions, how we judge the quality of analysis and research, how we can be confident we have the right capacity and capability, is critical to my Board delivering public health protection, and stepping up for the consumers' interests in relation to food.

We also wanted a Science Council that could look across the near and far horizons – are there signals we should be responding to, might there be gaps between areas of focus that in themselves create risk and uncertainty, are there system changes heading our way that we ought to anticipate and prepare for? At the time, we judged that this input would improve our science base, our decision making and our focus. And that was without knowing we would be preparing for life outside the EU, which brings an enormous increase in the science demanded by and from the FSA. Thank goodness we acted when we did.

The Science Council, four years on, has added value across all these dimensions and more. Its Annual Report to the FSA Board provides welcome assurance, constructive advice, and sound reflection on our continuous improvement approach to science and evidence, backed by a succession of thematic reports which have helped us to build a rigorous, robust and reliable science core to our post-EU role and responsibilities. We are incredibly grateful to Prof Sandy Thomas and her Science Council colleagues for their generosity with time and wisdom. They have already made a material difference here at the FSA.

Further information on the Science Council is available on [its website](#) or by contacting the Secretariat: **Science Council Secretariat Floors 6 & 7, Clive House, 70 Petty France, London, SW1H 9EX**

email: sciencecouncil@food.gov.uk

Overview of the Council

What it does

The Science Council is an independent Scientific Advisory Committee (SAC) which operates to the highest standards of openness and transparency. It provides independent high-level, expert strategic insight, challenge and advice to the FSA's Chief Scientific Adviser and to the Board and executive of the FSA on the FSA's use of science to deliver FSA objectives. Its purpose is to help ensure that the FSA identifies, sources, integrates and uses the best scientific evidence and expertise from all relevant disciplines to inform and evaluate its work.

When it meets

Two open Council meetings are held per year to ensure that the Council discusses in public the key issues and outcomes from its work. Council open meeting agendas, papers, minutes and reports are published on its website. In addition, closed meetings are held twice a year to discuss progress on Council work between the main meetings. In between these smaller closed meetings occur throughout the year to manage progress of ongoing Council work.

How it delivers advice

There are currently two principal ways in which Science Council provides advice to the FSA: Working Groups (for larger overarching issues) and in response to topics raised at Council meetings (for discrete ad-hoc topics).

Recommendations from Working Groups are presented to the FSA Board for its consideration. Since the Science Council was created in April 2017, there have been five Working Groups which are published its website.

How it remains open and independent

In addition to holding open meetings and publishing notes of those meetings and their recommendations, a register of members interests is maintained. This is regularly updated, and ahead of every main meeting of the Council members must identify whether they have a new interest and if their interests pose a conflict with their independence on the items under discussion. If so, the FSA Secretariat will agree the appropriate action to minimise this risk (up to and including excluding the member from discussion on that item).

The Science Council has its own published Code of Practice and Terms of Reference.

Member biographies

Professor Sandy Thomas (Chair)

Professor Sandy Thomas OBE is Director of the Global Panel on Agriculture and Food Systems for Nutrition, and an Honorary Professor at the Science Policy Research Unit at the University of Sussex. She has extensive experience of leading, convening and generating cross-disciplinary analysis and strategic science to inform to policy.



Professor John O'Brien

Professor O'Brien is founder of the Food Observatory, UK and a visiting Professor at Ulster University, Coleraine. Until 2018 he led Nestlé's global competence centre for Food Safety & Quality and their Food Safety & Integrity Research Programme in Lausanne, Switzerland. He is former head of food safety for Danone Group in Paris.



Professor Sarah O'Brien

Professor O'Brien is the Elizabeth Creak Professor of Translational Agritechnology in the School of Natural & Environmental Sciences at Newcastle University. She was Professor of Infection Epidemiology & Zoonoses in the Department of Public Health and Policy, University of Liverpool and first Director of the NIHR Health Protection Research Unit in Gastrointestinal Infections.



Dr Paul Turner

Dr Turner is MRC Clinician Scientist and Clinical Senior Lecturer in Paediatric Allergy & Immunology at Imperial College London, and Clinical Associate Professor at the University of Sydney. He leads a research programme on various aspects of allergy, including understanding drivers of severity in food allergy, allergen risk management, and novel diagnostics.



Professor Patrick J. Wolfe

Professor Wolfe holds Chairs in statistics and computer science at University College London, where he specialises in the mathematical foundations of data science.

A Royal Society Research Fellow and EPSRC Established Career Fellow in the Mathematical Sciences, he is Executive Director of UCL's Big Data Institute and its Centre for Data Science.



Professor Laura Green (retired 2020)

Professor Laura Green OBE is an epidemiologist specialising in animal health and its wider impacts. She is a Pro Vice Chancellor and Head of the College of Life and Environmental Sciences at the University of Birmingham. Her research often has a direct policy impact such as the role of cattle in persistence of bovine TB, the relationship between somatic cell counts and mastitis in dairy cattle, and the link between prompt treatment and minimising lameness in sheep.



Professor Mark Woolhouse (retired 2020)

Professor Woolhouse is an infectious disease epidemiologist and Chair of Infectious Disease Epidemiology at the University of Edinburgh.

He has worked on a variety of infectious disease systems: antimicrobial resistance in humans and livestock; verocytotoxigenic E. coli in cattle; foot-and-mouth disease in livestock; trypanosomiasis in humans and cattle; and transmissible spongiform encephalopathies in humans (vCJD), cattle (BSE) and sheep (scrapie).



Mark Rolfe (retired 2019)

Mark Rolfe is a Chartered Trading Standards Practitioner with over 30 years in that profession both delivering and leading the service in Kent. In 2015 he took up his current role as Head of Kent Scientific Services. This service is Kent County Council's in-house Public Analyst, toxicology and metrology calibration laboratory, providing services to local/national government and business.



Claire Nicholson (new in 2020)

Claire Nicholson is the Council member representing consumer interest. She has held a range of similar roles including having been an Independent Director to represent Consumer Interests on the Board of Red Tractor; the consumer member of the Advisory Committee on Novel Foods and Processes; a member of the Food Standards Agency Consumer Advisory Panel; and a member of the Advisory Committee on Consumer Engagement.



Professor Jonathan Wastling (new in 2020)

Professor Jonathan Wastling is Pro Vice-Chancellor and Executive Dean at Keele University where he heads the Faculty of Natural Sciences which encompasses subjects ranging from the life sciences and veterinary medicine, through to astrophysics and psychology. He is a Professor of Infection Biology with over 30 years of experience working on the biology of human and animal focusing on host-pathogen interactions, vaccine and drug development.



Professor Peter Gregory (new in 2020)

Professor Gregory is Emeritus Professor of Global Food Security at the University of Reading having previously been Professor of Soil Science at the same university. He is chair of the Recommended List Board for the AHDB and the Board of Crops For the Future UK CIC (maintaining oversight of research development).



Summary of Science Council Programme over the last 3 years

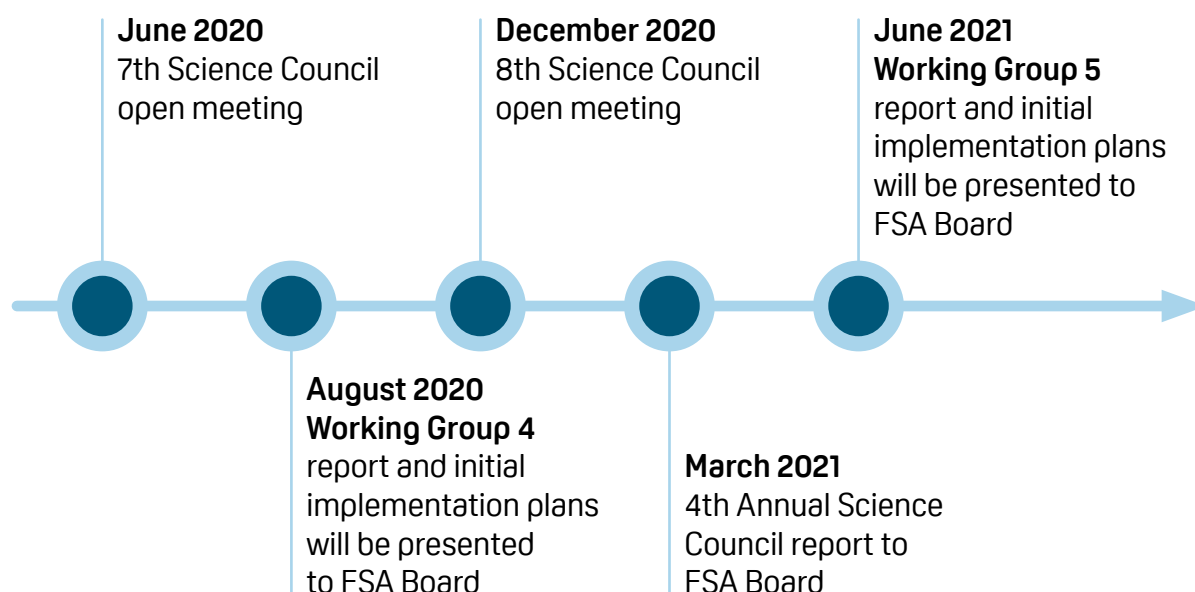
Since its founding in 2017, the Council (up to the end of March 2020) it has provided strategic advice to the FSA on:

- **Science use and assurance:** Working Group 1, led by Prof. Laura Green, proposed a comprehensive framework for better engagement internally and externally on FSA science and provided a steer for smarter engagement with researchers.
- **Assessing risk and uncertainty:** The recommendations from Working Group 2, led by Prof. Mark Woolhouse, helped establish key principles for the FSA risk analysis process.
- **Food system risks and horizon scanning:** Working Group 3, led by Prof. John O'Brien, provided recommendations on how to identify and assess trends with strategic impact 5–15 years into the future, which have been adopted as a basis for the FSA horizon scanning approach.
- **Targeted short-term questions** such as advice on the CSA's Strategic Evidence Fund and developing outcome-based measures for FSA science.

The Science Council's current activities are:

- **Working Group 4** has developed its recommendations on **data usage and digital technology** and reported them to the FSA Board in August 2020; and
- **Working Group 5** on **food hypersensitivity** started November 2019 and will be reporting its results to the FSA Board in June 2021, with an update in September 2020.

Summary of Science Council Activity (From June 2020 to June 2021)



Working Group 1:

Science Capability and Assurance

Outline of work

This started in June 2017 and reported in June 2018. Prof Laura Green led the Working Group **“To advise the [FSA] Board on how it can be confident that FSA has access to the right science capability and is using science to the best of its ability”**. This was approached in two phases. Phase one focused on how the FSA identifies and accesses the scientific evidence, advice and capabilities it needs. Phase two addressed how the FSA uses these inputs to inform its decisions and policies. This approach included reviewing case studies of where science was accessed and used by the FSA, a survey of staff and interviewing key FSA staff (including those involved in sourcing evidence and using it in decision making). This Working Group made 40 recommendations in its report on how the FSA accesses the best available scientific evidence, analysis and advice, and uses these effectively to inform FSA policies and advice.

Reflections from WG1 chair: Prof Laura Green

“I’d like to thank the Science Advisory Council members and the FSA for their commitment to making Working Group 1 ‘Science capability and assurance’ such a success. Chairing WG1 was a highly stimulating experience, I was fortunate to interview a wide range of FSA staff to talk about their work and how they used science, they were very open and candid when interviewed. The interviews helped us identify strengths and opportunities for improvement around creation and use of science in the FSA back in 2017/18. The Science Council Secretariat provided us with highly professional and timely support, especially given this was the first Working Group established by the Council and we were very much “feeling our way”. And we had very broad objectives and limited time.

The subject addressed by WG1 was an important first task because the FSA was looking to build its science capacity. Our recommendations covered a range of topics including; how the FSA could identify and manage its internal capability and work best with external expertise, access the best science to inform its advice and policies, and how to provide assurance to stakeholders that science acquisition and use were effective. I find it personally gratifying that these recommendations have been taken forward and that the science culture in the FSA is developing and science being placed is at the heart of the FSA’s work.”

“I was fortunate to interview a wide range of FSA staff to talk about their work and how they used science, they were very open and candid when interviewed.”

Impact of WG1

The recommendations from this review were wide reaching and in response the FSA has built internal science capability and leadership, influencing how it structures the FSA science team (creating posts for research coordination partnerships and science communication).

SAC recruitment has expanded their membership in 2019 and 2020 and is introducing a Register of Specialists to increase our access to external expertise.

FSA has also set out how it uses evidence to inform decisions and communicate that process openly.

“The recommendations from this review were wide reaching ...”

Working Group 2:

Risk and Uncertainty

Outline of work

This started in June 2017 and reported in June 2018. Prof Mark Woolhouse led the Working Group to answer the FSA Board question **“What does the Council advise to be best practice in establishing and communicating risk and certainty”**. This was approached in two phases. The first phase considered the current FSA (and other relevant) approaches to establishing risk and uncertainty and produced advice in the form of draft principles for best practice and what the FSA should do where any gaps exist or opportunities to improve, arise. The second phase (by June 2018) considered current and best practice in communicating risk and uncertainty and any opportunities for the FSA to strengthen its approach. This involved working with key officials (including FSA Risk Assessment Unit and Communications, and Science and Policy teams) as well as the FSA’s other SACs. This Working Group set out in its [report](#) 15 principles of best practice to follow when carrying out and communicating Risk Analysis.

Reflections from WG2 chair: Prof Mark Woolhouse

“Chairing this working group was a very rewarding experience. First understanding how risk assessment was carried out by the FSA at the time and proposing principles to bolster their existing process; then considering how risk and uncertainty could be best communicated by the Agency. It was a collaborative endeavour working with the CSA and FSA officials, including FSA Risk Assessment Unit and Communications, Science and Policy teams. The Working Group consulted the FSA’s other Scientific Advisory Committees on the principles and gained valuable insights. The Science Council Secretariat provided me with great support, both professional and timely, especially given this was one of the earliest Working Groups established by the Council and would help provide a template for future work. I would like to thank everyone involved.

The question addressed by this Working Group was significant, as with the UK leaving the European Union the FSA needed to take a central role in risk analysis of our food system. The Agency has taken on-board the Council recommendations, with the FSA adopting best practice principles for its new risk analysis process, particularly the clear separation of risk assessment and risk management. It is also good to see that risk assessment supported by sound evidence is explicitly at the core of the FSA’s work.”

“The question addressed by this Working Group was significant, as with the UK leaving the European Union the FSA needed to take a central role in risk analysis of our food system.”

Impact of WG2

The best practice principles for establishing and communicating risk and uncertainty, which have been drawn from international standards and amplified by the Science Council Working Group, provided the structure for articulating the FSA’s framework for risk analysis. The recommendations from the Working Group have informed the process and provided some of the key underpinning principles (e.g. separation of risk assessment and management functions). The principles for communicating risk and uncertainty were taken forward by the Advisory Committee for Social Science (ACSS) as the starting point for the FSA risk communication toolkit, currently in development.

“The recommendations from the Working Group have informed the process and provided some of the key underpinning principles ...”

Working Group 3:

Food Systems and horizon scanning

Outline of work

Prof John O'Brien led the Working Group to answer a question from the FSA Board **"What should the FSA do to improve its horizon scanning and its understanding of global food systems risks (and opportunities)?"**. Work started in June 2017 and the Group reported in June 2019. The FSA commissioned a desk study, carried out by RAND Europe to help better understand the current global food system context and its emerging issues, and the FSA's place in that fast changing environment. A review and prioritisation exercise were then undertaken to identify emerging issues in the global food system. This second exercise was supported by an FSA-led expert stakeholder workshop. The Working Group set out 5 recommendations in its report, including principles for long term strategic horizon scanning and advice on their implementation.

Reflections from WG3 chair: Prof John O'Brien

"The primary challenge set by the FSA was to improve horizon scanning and understanding of global food systems risks and opportunities. Core to the challenge was the need to better understand drivers and causes of food safety and consumer interest issues. The response of the Science Council necessitated a combination of expertise and experience. Because there is no single model approach available to address the challenge of horizon scanning, the study drew on insights from FSA staff and others, a commissioned desk study, and an expert workshop to provide advice tailored to the FSA's needs.

The final recommendations were intentionally crafted to give the FSA flexibility to design the optimal solution, while incorporating experience of what had worked elsewhere. We particularly appreciated the early feedback from the FSA on the proposed implementation plan followed by regular updates on the execution of the plan."

"The response of the Science Council necessitated a combination of expertise and experience."

Impact of Work

The FSA has established a strategic insights teams to further develop its horizon scanning.

In line with the report recommendations FSA is drawing on many sources and types of information to understand how current and emerging risks can offer insights into drivers of future risks. The FSA has developed overarching guidance for how to undertake horizon scanning, based on a PESTLE (Political, Economic, Sociological, Technological, Legal and Environmental) analysis.

FSA has built its own community of interest and has wider engagement, for example joining the cross-government Heads of Horizon Scanning Network. Horizon scanning principles from WG3 have also been used effectively for near-term horizon scanning when managing FSA's response to COVID-19.

“In line with the report recommendations FSA is drawing on many sources and types of information to understand how current and emerging risks can offer insights into drivers of future risks.”

Working Group 4:

Data usage and digital technology

Outline of work

Prof Patrick Wolfe led this Working Group to answer the question **“How can the FSA better understand the next phase of technology developments, recognising future challenges and opportunities, and having sufficient understanding of them to be able to ensure positive governance of the food system?”**. Work started in September 2018 and the Group reported its recommendations to the FSA Board in August 2020. There were two phases. Phase 1 comprised a scoping study to better understand current FSA data usage across several business areas. This included interviews with FSA staff about their current use of and business aspirations around data. Phase 2 commissioned research from the Turing Institute and the Internet of Food Things to look outwards at future trends and opportunities for data manipulation and utilisation. The final report contains 6 key recommendations on data standards, building FSA staff knowledge & capability and open data.

Reflections from WG4 chair: Prof Patrick Wolfe

“This forward look at the opportunities and challenges for the FSA in relation to its use of data and digital technologies was stretching for the Science Council’s collective expertise and took us in a timely and important new direction. Our report emphasises the FSA’s strong reputation and positioning as a ‘data enabled organisation,’ providing critical challenge and assurance in how the FSA’s capabilities and capacity can be further enhanced by innovative approaches to data analysis and the associated challenges and opportunities. Our commissioned research projects with The Alan Turing Institute – which crystallised the important roles of data ethics and algorithmic transparency in delivering the FSA’s mission going forward – and the Internet of Food Things – which resulted in new FSA capabilities and standards to enable the exchange of data across various parties in business and Government through its Open Federation Ecosystem pilot, which might provide an ability to operate with reduced friction at borders – also sought further to support the FSA strategic investment in data innovation. This work was delivered a few weeks ahead of the Government’s National Data Strategy (which highlights the FSA’s Food Hygiene Rating Scheme and its supporting application processing interface (API) service as a good practice case study) and was warmly received by the FSA Board.”

Working Group 5:

Food hypersensitivity

Outline of Work

This started in November 2019, following a request from the FSA Board for the Science Council to:

1. Consider and advise on future research priorities and direction in respect to food hypersensitivity.
2. Conduct a review of the science and evidence base for addressing food hypersensitivity, and the part the FSA and others should play in enhancing knowledge.

This work was approached in three stages, as follows:

Phase 1

- To provide oversight and assurance of an internal FSA review into the previous and existing FSA research programme for food hypersensitivity.
- To evaluate best practice across different areas of FSA research interest, in terms of how science influences policy/decision making.

Phase 2

- To undertake a cross-stakeholder Research Priority Setting exercise to identify current priorities for research (in the next 5 years) to support FSA's strategy on food hypersensitivity.
- To undertake a comprehensive review of the literature to evaluate the current evidence base relating to these priority areas.

Phase 3

- Horizon scanning of the food hypersensitivity environment in the future (5–15 years and beyond) to inform future long-term FSA research and policy direction.

The Working Group is led by Dr Paul Turner, and the Science Council provided its first report (based on Phase 1) to the FSA Board in September 2020. The final recommendations are due be reported in June 2021.



“It is heartening to know that the hard work of the Council over the last 3 years has paid dividends and that our high-level, expert strategic insight, challenge and advice has been valued by the FSA Board, Executive and the CSA.”

Future of the Council



Prof Sandy Thomas **Science Council Chair**

“It is heartening to know that the hard work of the Council over the last 3 years has paid dividends and that our high-level, expert strategic insight, challenge and advice has been valued by the FSA Board, Executive and the CSA. It provides strong motivation and impetus as we move forward into the next period of the Science Council. I have personally found my time as chair of the Science Council both challenging and very fulfilling. I have also learnt a great deal. Working with such knowledgeable and dedicated experts in the Council has been a privilege and it is very rewarding to know that we have made an important contribution to delivering safe food in the UK. It is an exciting time for us, and we are all looking forward to the next 3 years at a time of very considerable change.”

“Working with such knowledgeable and dedicated experts in the Council has been a privilege ...”



Prof Rick Mumford **Deputy Director (Science, Evidence and Research)**

“As Head of science, evidence and research at the FSA, I greatly value the input that the Science Council is able to provide. With their diverse scientific backgrounds, its members are able to bring a wide range of experience and knowledge to support the work we do; providing high quality advice and strategic guidance on areas where the FSA itself has limited capability. Through the work of the Science Council and the insights it offers, we have been identifying more clearly the direction we need for implementing new science-driven initiatives. For example, both the development of our new risk analysis and horizon scanning processes were initiated from Council working groups. I also greatly value the role of the Council as ‘a critical friend’ and find having access to independent, constructive challenge is extremely useful, as we work to develop and grow our scientific capabilities within the FSA. I would like to thank them for their efforts over the previous three years and look forward to working with them into the future.”

“I greatly value the input that the Science Council is able to provide.”



Emily Miles

FSA Chief Executive

“When I joined the FSA in September 2019, I could see immediately how important the Science Council was. The FSA needs to be trusted to tell the truth about food, bringing evidence and in-depth understanding to all food matters, in the consumer interest. Science and evidence that is high quality is essential to our decision-making. The Science Council is crucial for our work, giving us independent advice on how to use science and evidence. I have been pleased to attend meetings with the Council and to meet their Chair, Prof Sandy Thomas. I am impressed by the range and depth of their expertise. It is clear to me that the Science Council can rightly be proud of their position as a ‘critical friend’ to the FSA and of the advice they have provided over the last 3 years.”

“The Science Council is crucial for our work, giving us independent advice on how to use science and evidence.”



Prof Robin May

FSA Chief Scientific Advisor

“During these first few months as FSA Chief Scientific Adviser, I have been deeply impressed by the expertise and commitment of the Science Council. Their independent advice and role as a ‘critical friend’ is central to ensuring the strength and objectivity of our science base. 2020 has been an extraordinary and challenging year for everyone, but if the pandemic has taught us anything, it is that transparent, independent scientific advice is not a luxury but a fundamental necessity across all of government. As we look ahead to 2021 and beyond, the role of science in shaping policy will be ever more prominent and I am hugely grateful for the work that Science Council is already undertaking to help us meet that challenge. Science Council colleagues are already helping develop robust standards for evidence presented to the FSA by third parties – something that we anticipate being a major feature of the post-EU landscape – and are helping to guide our thinking on big, challenging topics such as the impact of achieving ‘Net Zero’ on the food chain. Such discussions are both intellectually fascinating and fundamentally critical to the FSA, and I very much look forward to continuing to work closely with them over the next three years.”

“I have been deeply impressed by the expertise and commitment of the Science Council.”



“It is an exciting time for the Science Council, and we are all looking forward to the next 3 years at a time of very considerable change.”

Annex:

Annual Report, Summary of Science Council Activity (FY2019/2020)

Introduction

1. This report provides a summary of the Science Council's activities in its third year (1 April 2019–31 March 2020).
2. The Science Council is an independent expert committee of the Food Standards Agency, during the reporting period this comprised of a Chair and seven members.

Membership	Specialism	Term (incl)
Professor Sandy Thomas (Chair)	Leading, convening and generating cross-disciplinary analysis and strategic science to inform policy.	Apr 2017–Mar 2022
Professor Laura Green	Epidemiology specialising in animal health and its wider impacts.	Apr 2017–Mar 2020
Professor John O'Brien	Food safety management and identifying emerging risks.	Apr 2017–Mar 2020
Professor Sarah O'Brien	Gastrointestinal infections (such as <i>Campylobacter</i> , <i>Salmonella</i> and viruses in food).	Apr 2017–Mar 2020
Mark Rolfe	Trading Standards and Public Analysts.	Apr 2017–Dec 2019
Dr Paul Turner	Allergy & Immunology.	Apr 2017–Mar 2020
Professor Patrick Wolfe	Statistics and computer science (specialising in the mathematical foundations of data science).	Apr 2017–Mar 2020
Professor Mark Woolhouse	Infectious Disease Epidemiology and Risk Analysis.	Apr 2017–Mar 2020

3. The Council was established on 1 April 2017 to provide high-level, expert strategic insight, challenge and advice to the FSA's Board, Executive and Chief Scientific Adviser (CSA) on the FSA's use of science to deliver its objectives. Its purpose is to ensure that the FSA identifies, sources, integrates and uses the best scientific evidence and expertise from all relevant disciplines to inform and evaluate its work.

4. The FSA's CSA, Prof. Guy Poppy attended the biannual Science Council open session meetings during this period. The Science Council Secretariat is provided by the FSA's Strategic Science and Assurance Team, led by the Secretary (Dr Patrick Miller followed by Dr. Chun-Han Chan) and Secretariat Lead (Dr Ben Goodall followed by Mr Paul A. Nunn).
5. In December 2019 Mr. Mark Rolfe left the Science Council. Profs. Laura Green and Mark Woolhouse also left the Science Council once their first 3-year term was completed at the end of March 2020.
6. Full details of the responsibility of the Science Council can be found on the [Science Council website](#) (including the Code of Practice, meeting papers, minutes and member biographies).

Science Council work programme

7. During the period of this report, the Council met in open session on 27 June 2019 and on 17 December 2019. It also continued to develop its work between meetings through formal Working Groups. Prof. John O'Brien deputised for the Science Council Chair and presented her [third annual report to the FSA Board on 11 March 2020](#).
8. Over the period, the Council continued the work of two existing Working Groups considering two key questions: the first posed by the FSA Chair at the Science Council June 2017 meeting and the second co-developed and agreed with the FSA in September 2018:
 - **Working Group 3: Global food systems and horizon scanning:** What should the FSA do to improve its horizon scanning and its understanding of global food systems risks and opportunities?
 - **Working Group 4: Data usage and digital technology:** How can the FSA better understand the next phase of technology developments, recognising future challenges and opportunities, and having sufficient understanding of them to be able to ensure positive governance of the food system?
9. In November 2019, the Science Council formally established a fifth Working Group, to answer a request from Heather Hancock in May 2019 on **food hypersensitivity** to:
 - Consider and advise on future research priorities and direction in respect to food hypersensitivity.
 - Conduct a review of the science and evidence base for addressing food hypersensitivity, and the part the FSA and others should play in enhancing knowledge.

Science Council outputs

10. [The final report and recommendations from Working Group 3 on Global food systems and horizon scanning](#), chaired by Prof. John O'Brien, were finalised by the Council in May 2019 by correspondence.
11. Working Group 3 recommendations and an initial FSA implementation response was endorsed by [the FSA Board at their June 2019 meeting](#). Progress on implementing these recommendations was provided at the 6th and 7th open meetings of the Science Council.
12. Working Group 4 submitted its recommendations to the [FSA Board at its meeting in August 2020](#).

Future work

13. The Science Council will be working to strengthen its relationship with the FSA Scientific Advisory Committees (SACs), especially the Advisory Committee for Social Sciences; whilst further building new relationships with similar independent science advisory groups advising Government to share experiences, improve communications and awareness of emerging issues.
14. The Science Council is also carrying out a short critical review of the quality of 3rd party evidence due to present its final report to the FSA Board in March 2021.

Annual costs

15. The operation of the Science Council is funded by the FSA. For the financial year 1 April 2019 to 31 March 2020 – covering project costs, members' expenses and fees and administrative costs for meetings – total costs were £35,652. Information on fee rates and expenses guidance are included in the FSA SAC Guidance on Committee Fees and Expenses.

Appendix:

Science Council self-assessment against good practice guidelines for the independent scientific advisory committees

Twenty-nine principles of good practice have been developed by the Chairs of the SACs that advise the FSA. These [FSA Good Practice Guidelines for Science Advisory Committees](#) were reviewed and updated in 2012. Different committees have different duties and discharge those duties in different ways. Therefore, not all of the principles set out below will be applicable to all of the committees, all of the time. This list of principles is considered by each committee annually as part of the preparation of its Annual report and is attached as an Appendix to it.

Response by the FSA Science Council for the period of its second Annual Report (from 1 April 2019 to 31 March 2020)

1. The role of the Science Council is to provide high-level, expert strategic insight, challenge and advice to the FSA's Board and executive of the FSA and Chief Scientific Adviser on the FSA's use of science to deliver FSA objectives. It did not carry out risk assessments or detailed investigations of scientific dossiers on specific risks, products or processes. It did, however, look at how these processes are conducted and make recommendations on good practice. In carrying out its work, the Science Council looked at the evidence – e.g. how the FSA can improve its horizon scanning and understanding of global food systems risks and opportunities, and in doing so, sought to abide by the principles of good practice developed by the FSA and elsewhere.

Defining the problem and the approach

Issue	Complies?	Notes/comments
1. The FSA will ensure that issues it asks a SAC to address are clearly defined and take account of stakeholder expectations in discussion with the SAC Secretariat and where necessary the SAC Chair. The SAC Chair will refer back to the FSA if discussion suggests that further iteration and discussion of the task is necessary. Where a SAC proposes to initiate a piece of work the SAC Chair and Secretariat will discuss this with FSA to ensure the definition and rationale for the work and its expected use by the FSA are clear.	Yes	The FSA's Chief Scientific Adviser attends most Science Council meetings and discusses the rationale for the questions with the Council. FSA contribution to Working Groups (such as interviews with staff and contributions to meetings) enables ongoing discussion and iteration as necessary.

Seeking input

Issue	Complies?	Notes/comments
2. The Secretariat will ensure that stakeholders are consulted at appropriate points in the SAC's considerations. It will consider with the FSA whether and how stakeholder views need to be taken into account in helping to identify the issue and frame the question for the committee.	Yes	Science Council full meetings are held in public. Working Groups do not meet in public but report their work to full meetings in open session. The Science Council publishes notes of Q&A sessions alongside formal minutes. Working Groups consult the FSA SACs as appropriate.
3. Wherever possible, SAC discussions should be held in public.	Yes	Science Council full meetings are held in public. Working Groups do not meet in public but report their work to full meetings in open session.
4. The scope of literature searches made on behalf of the SAC will be clearly set out.	N/A	The Council's Working Group 3 commissioned a desk study to synthesise information and insights from existing work on global food systems. This project includes an element of literature scanning and the scope and the approach for this is set out in the Working Group final report and within the commissioned report. The commissioned Rand report ' <u>Insights into Global Food System Risks and opportunities and their implications for the FSA</u> ' was published on the Science Council website in June 2019 along with the WG3 report.

Issue	Complies?	Notes/comments
5. Steps will be taken to ensure that all available and relevant scientific evidence is rigorously considered by the committee, including consulting external/additional scientific experts who may know of relevant unpublished or pre-publication data.	Yes	The Science Council does not routinely consider detailed primary scientific documents, but it does examine rigorously the evidence that is presented. Members are expected to bring relevant additional materials to the attention of the Council.
6. Data from stakeholders will be considered and weighted according to quality by the SAC.	Yes	The Science Council weighed all relevant information according to quality, irrespective of its source.
7. Consideration by the Secretariat and the Chair (and where appropriate the whole SAC) will be given to whether expertise in other disciplines will be needed.	Yes	The Science Council kept this under review and it has the option to co-opt or invite external input where necessary, through mechanisms such as the FSA's Register of Specialists.
8. Consideration will be given by the Secretariat or by the SAC, in discussion with the FSA, as to whether other SACs need to be consulted.	Yes	Working Groups consult the FSA SACs as appropriate. The Council is developing its engagement with the SACs and, as well as the Council Chair attending the regular workshops of SAC Chairs, some Council members are paired with a SAC relevant to their expertise, for regular update and cross-engagement.

Validation

Issue	Complies?	Notes/comments
9. Study design, methods of measurement and the way that analysis of data has been carried out will be assessed by the SAC.	Science Council complies, to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.
10. Data will be assessed by the committee in accordance with the relevant principles of good practice, e.g. qualitative social science data will be assessed with reference to guidance from the Government's Chief Social Researcher.	Science Council complies, to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.
11. Formal statistical analyses will be included wherever appropriate. To support this, each SAC will have access to advice on quantitative analysis and modelling as needed.	Science Council complies, to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.
<p>12. When considering what evidence needs to be collected for assessment, the following points will be considered:</p> <ul style="list-style-type: none"> the potential for the need for different data for different parts of the UK or the relevance to the UK situation for any data originating outside the UK; and whether stakeholders can provide unpublished data. 	Science Council complies, to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.

Issue	Complies?	Notes/comments
13. The list of references will make it clear which references have been subject to external peer review, and which have been peer reviewed through evaluation by the Committee, and if relevant, any that have not been peer reviewed.	Science Council complies, to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.

Uncertainty

Issue	Complies?	Notes/comments
14. When reporting outcomes, SACs will make explicit the level and type of uncertainty (both limitations on the quality of the available data and lack of knowledge) associated with their advice.	Science Council complies to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.
15. Any assumptions made by the SAC will be clearly spelled out, and, in reviews, previous assumptions will be challenged.	Science Council complies to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.

Issue	Complies?	Notes/comments
16. Data gaps will be identified and their impact on uncertainty assessed by the SAC.	Science Council complies to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.
17. An indication will be given by the SAC about whether the evidence base is changing or static, and if appropriate, how developments in the evidence base might affect key assumptions and conclusions.	Science Council complies to the extent these criteria apply to its work.	The Science Council does not generally consider the type of detailed reviews and analyses of scientific data that are the primary focus of these criteria. However, it does advise on best practice, governance and assurance of the FSA's use of science.

Drawing conclusions

Issue	Complies?	Notes/comments
18. The SAC will be broad-minded, acknowledging where conflicting views exist and considering whether alternative interpretations fit the same evidence.	Science Council complies to the extent these criteria apply to its work.	This is implicit in the Science Council's role to provide high-level, expert strategic insight, challenge and advice to the FSA's Board and executive and Chief Scientific Adviser on the FSA's use of science to deliver FSA objectives.
19. Where both risks and benefits have been considered, the committee will address each with the same rigour, as far as possible; it will make clear the degree of rigour and uncertainty, and any important constraints, in reporting its conclusions.	Science Council complies to the extent these criteria apply to its work.	The Science Council does not carry out assessments of risks and/or benefits as such. It would consider the advantages and disadvantages of different options in making its recommendations.

Issue	Complies?	Notes/comments
20. SAC decisions will include an explanation of where differences of opinion have arisen during discussions, specifically where there are unresolved issues, and why conclusions have been reached. If it is not possible to reach a consensus, a minority report may be appended to the main report, setting out the differences in interpretation and conclusions, and the reasons for these, and the names of those supporting the minority report.	Science Council complies to the extent these criteria apply to its work.	This is covered explicitly in the <u>Science Council Code of Practice</u> .
21. The SAC's interpretation of results, recommended actions or advice will be consistent with the quantitative and/or qualitative evidence and the degree of uncertainty associated with it.	Science Council complies to the extent these criteria apply to its work.	Science Council aimed to follow this principle.
22. SACs will make recommendations about general issues that may have relevance for other committees.	Science Council complies to the extent these criteria apply to its work.	This is implicit in the Science Council's role to provide high-level, expert strategic insight, challenge and advice to the FSA's Chief Scientific Adviser, the Board and the executive of the FSA on the FSA's use of science to deliver its objectives.

Communicating committees' conclusions

Issue	Complies?	Notes/comments
23. Conclusions will be expressed by the SAC in clear, simple terms and use the minimum caveats consistent with accuracy.	Science Council complies to the extent these criteria apply to its work. See comments.	Given the high-level strategic advice the Science Council provides this tends to lend itself minimal use of jargon and technical terms and it aimed to make its reports clear and concise.
24. It will be made clear by the SAC where assessments have been based on the work of other bodies and where the SAC has started afresh, and there will be a clear statement of how the current conclusions compare with previous assessments.	Science Council complies to the extent these criteria apply to its work. See comments.	Science Council meeting papers and minutes made clear the origin of issues under discussion. It put its conclusions in the context of other work where appropriate.
25. The conclusions will be supported by a statement about their robustness and the extent to which judgement has had to be used.	Science Council complies to the extent these criteria apply to its work. See comments.	The Science Council made clear the basis for its recommendations and any assumptions and caveats.
26. As standard practice, the committee secretariat will publish a full set of references (including the data used as the basis for risk assessment and other committee opinions) at as early a stage as possible to support openness and transparency of decision-making. Where this is not possible, reasons will be clearly set out, explained and a commitment made to future publication wherever possible.	Science Council complies to the extent these criteria apply to its work. See comments.	The Science Council did not carry out risk assessment or assessment of detailed scientific data of the type that is the focus for this criterion.
27. The amount of material withheld by the SAC or FSA as being confidential will be kept to a minimum. Where it is not possible to release material, the reasons will be clearly set out, explained and a commitment made to future publication wherever possible.	Science Council complies to the extent these criteria apply to its work. See comments.	The Science Council followed this criterion.

Issue	Complies?	Notes/comments
<p>28. Where proposals or papers being considered by the FSA Board rest on scientific evidence produced by a SAC, the Chair of the SAC (or a nominated expert member) will be invited to the table at the Open Board meetings at which the paper is discussed. To maintain appropriate separation of risk assessment and risk management processes, the role of the Chairs will be limited to providing an independent view and assurance on how their committee's advice has been reflected in the relevant policy proposals, and to answer Board Members' questions on the science. The Chairs may also, where appropriate, be invited to provide factual briefing to Board members about particular issues within their committees' remits, in advance of discussion at open Board meetings.</p>	<p>Science Council complies to the extent these criteria apply to its work. See comments.</p>	<p>This did not apply directly, since the Science Council did not carry out risk assessments or detailed reviews of scientific evidence. The Science Council Chair sent a deputy (Prof John O'Brien) to provide an annual report on the Council's work to the FSA Board in <u>March 2020</u>. Prof John O'Brien (Chair of Working Group 3) also attended the <u>June 2019</u> FSA Board meeting for handover of the report of WG3 on Global food systems and horizon scanning.</p>
<p>29. The SAC will seek (and FSA will provide) timely feedback on actions taken (or not taken) in response to the SAC's advice, and the rationale for these.</p>	<p>Science Council complies to the extent these criteria apply to its work. See comments.</p>	<p>The Council asks for feedback and reports from FSA on progress towards implementation of the Council's recommendations. For the period covered by this report FSA Executive has provided feedback at the <u>27 June 2019</u> meeting of the Science Council on implementation of the recommendations from WG1 and WG2. Feedback was also provided on the implementation of the recommendations from WG3 at the <u>17 December 2019</u> meeting of the Science Council.</p>